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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/307,574	05/07/1999	Phillip Mattison	042390.P4577	5046

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EXAMINER

LUU, THANH X

ART UNIT PAPER NUMBER

2878

DATE MAILED: 11/15/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/307,574

Applicant(s)

MATTISON, PHILIP E.

Examiner

Thanh X Luu

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 August 2002.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 16-42 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 16-42 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on August 5, 2002 has been entered.

Claims 16-42 are currently pending.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in-

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or
(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

3. Claims 16, 17, 24 and 25 are rejected under 35 U.S.C. 102(e) as being anticipated by Borg et al. (U.S. Patent 6,476,864).

Regarding claims 16 and 17, Borg et al. disclose (see Figure 3B) an apparatus comprising: an analog photocell (any one of 10); a sample and hold amplifier, hereinafter S/H amplifier (230 or 240), a first input (column line) of the S/H amplifier

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being a charge from the analog photocell, a second input to the S/H amplifier being a reference voltage (Ref. Voltage 88); an analog to digital converter, hereinafter A/D converter (220), the A/D converter converting the output of the S/H amplifier to a digital value. Further, since a S/H amplifier is an amplifier, it inherently produces a scaled version of the voltage output of the analog photocell.

Regarding claims 24 and 25, Borg et al. disclose (see Figure 3B) a method comprising: inputting a charge of an analog photocell (any one of 10) to a S/H amplifier (230, 240); inputting a reference voltage (88) to the S/H amplifier; converting (with A/D converter 220) an output of the S/H amplifier to a digital value. The S/H amplifier inherently modifies the scale of the analog photocell charged since it amplifies signals.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 18, 19, 26 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Borg et al. in view of Kanda et al. (U.S. Patent 5,929,905).

Regarding claims 18, 19, 26 and 27, Borg et al. disclose the claimed invention as set forth above. Further, since the photocell of Borg et al. detects an image scene, light from ambient sources or ambient light conditions is exhibited in the detected signal. The S/H amplifier scales the detected signal, thus, the output of the S/H amplifier is based on ambient light conditions. Borg et al. do not specifically disclose matching the

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dynamic range of the photocell with the dynamic range of the A/D converter. Kanda et al. teach (see column 3, lines 14-19) matching the dynamic range of a photocell to the dynamic range of subsequent circuits. Thus, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to match the dynamic range of the elements as claimed in the apparatus and method of Borg et al. in view of Kanda et al. to improve detection.

6. Claims 20-23 and 28-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Borg et al. in view of Gordon et al. (U.S. Patent 3,833,903).

Regarding claims 20-22 and 28-30, Borg et al. disclose (see Figure 3B) the apparatus and method as claimed, as set forth above. However, Borg et al. do not specifically disclose the specifics of the A/D converter. Gordon et al. teach (see Figure 2) an A/D converter comprising a voltage controlled oscillator (46), hereinafter VCO, an input of the VCO being an analog input; and a counter (50) being driven by the output of the VCO. Thus, Gordon et al. recognize (see column 1, lines 37-39) the configuration serves as a simple and inexpensive A/D converter. Further, the counter inherently stores value into a memory or register otherwise the count is lost. Gordon et al. also teach (see Figure 2) the counter is reset (RESET) after a certain period of time. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide the A/D converter of Gordon et al. in the apparatus and method of Borg et al. as desired to reduce the cost and complexity of the apparatus.

Regarding claims 32, 33, 36-39, 41 and 42, Borg et al. disclose (see Figure 3B) a digital photocell, comprising: an analog photocell (any one of 10); a S/H amplifier (230,

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240), a first input of the S/H amplifier being an output of the analog photocell and a second input of the S/H amplifier being a reference voltage (88). Borg et al. also disclose (see Figure 3B) the photocell (10) is included in a pixel array. In addition, Borg et al. disclose an A/D converter connected to the output of the S/H amplifier. Further, since the S/H amplifier amplifies, the S/H amplifier scales its input. Also, Borg et al. do not specifically disclose of a VCO or a counter. However, Gordon et al. teach (see Figure 2) an A/D converter comprising a VCO (46), an input of the VCO being an analog input; and a counter (50) being driven by the output of the VCO. Thus, Gordon et al. recognize (see column 1, lines 37-39) the configuration serves as a simple and inexpensive A/D converter. Also, since the input of the VCO is based on an input from an S/H amplifier (which has input from the photocell), the input to the VCO is scaled based on ambient light levels. Further, the counter inherently stores value into a memory or register otherwise the count is lost. In addition, since the output of the counter is the converted digital value, the count is inherently proportional to the intensity of the light incident on the analog photocell. Gordon et al. also teach (see Figure 2) the counter is reset (RESET) after a certain period of time. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide the A/D converter of Gordon et al. in the apparatus and method of Borg et al. as desired to reduce the cost and complexity of the apparatus.

Regarding claims 23, 31, 34, 35 and 40, Borg et al. in view of Gordon et al. disclose the claimed invention as set forth above. Borg et al. and Gordon et al. do not specifically disclose the time period is an integration period of the analog photocell.

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However, it is well known in the art to provide correct timing and integration in such an A/D converter circuit to obtain a desired conversion. Thus, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide the time period as the integration time of the photocell in the apparatus of Borg et al. in view of Gordon et al. to provide the desired optimal A/D conversion.

Response to Arguments

7. Applicant's arguments with respect to claims 16-42 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thanh X. Luu whose telephone number is (703) 305-0539. The examiner can normally be reached on Monday-Friday from 6:30 AM - 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Porta, can be reached on (703) 308-4852. The fax phone number for the organization where the application or proceeding is assigned is (703) 308-7722.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

txl
November 14, 2002


Thanh X. Luu
Patent Examiner